

**REMARKS:**

**Status of the Claims**

Claims 1-50 were originally filed. In the September 18, 2007 amendment, the Group I invention was elected, and claims 14-19, 28, 29, and 33-35 were canceled. In the July 2, 2008 Amendment, claims 1, 2, 38, and 39 were further canceled. The remaining claims 3, 4, 40, and 41 stand rejected in the June 18, 2009 Office Action. Upon entry of this Amendment, the same set of claims will be pending.

**Claim Rejection Under 35 U.S.C. § 102**

In the outstanding Office Action, Examiner asserts that “[c]laims 3-4, 40-41 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nakatsu *et al.* (US 6780443 B1) for the reasons set forth in the previous Office Action . . .” (*See*, Office Action, page 3, lines 9-10).

Claims 3, 4, 40, and 41 were not rejected under 35 U.S.C. § 102(e) in the March 28, 2008 Office Action. Applicants respectfully submit that Examiner erred in this 35 U.S.C. § 102 rejection by introducing new ground of rejections in the October 1, 2008 Final Office Action and again in the outstanding Office Action. Nevertheless, Applicants submit the following remarks in response to Examiner’s statement under this 35 U.S.C. § 102 rejection.

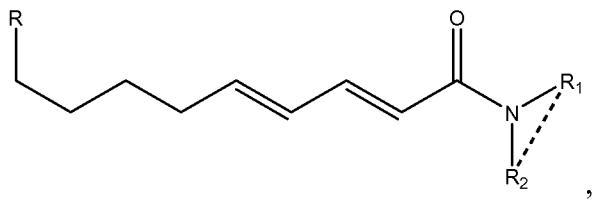
• **There is no rationale or evidence tending to show inherency**

First, Examiner refers to the Nakatsu disclosure (column 3, lines 7-12) and asserts that black pepper extract **inherently** contains alkadienamides (*See*, Office Action, page 3, lines 15-16).

In Nakatsu *et al.*, the disclosure of black pepper reads the following:

Certain materials are known to cause a tingling, numbing and/or stinging sensation . . . . These include. . . **Black pepper extract (*Piper nigrum*) having the active ingredients Chavicine and Piperine** (*See*, Nakatsu *et al.*, column 3, lines 9-11).

Thus, Nakatsu *et al.* teach two specific ingredients of black pepper extract, Chavicine and Piperine. Nakatsu *et al.* do not teach other ingredients such as other alkadienamides, let alone a genus of alkadienamides containing a defined core structure of:



(*See*, Specification, page 3, 1<sup>st</sup> paragraph), or even further the specific alkadienamides as claimed (i.e., N-isobutyl-E2, E4-decadienamide, N-isobutyl-E2, E4-undecadienamide, N-pyrollidyl-E2, E4-decadienamide, and N-piperidyl-E2, E4-decadienamide).

In accordance with MPEP 2112 (IV), inherency cannot be established by mere possibilities or even probabilities. Even when prior art discloses a genus, it still does not inherently disclose all species within that broad category. **It must be examined to see if a disclosure of the claimed species has been made.**

Here, there is no teaching of a genus of compounds in Nakatsu *et al.*, let alone the specific alkadienamides as claimed. For at least these reasons, Applicants respectfully submit that Examiner has not met the inherency criteria set forth in MPEP 2112 (IV), and failed to provide “a basis in fact” (evidence) and/or reasoning tending to show inherency.

- Spiranthol is distinct from the claimed invention

Secondly, Examiner asserts Applicants argued that tingling sensate of spilanthol is not taught (*See*, Office Action, page 4, line 4). It is respectfully submitted that **Applicants, in fact, affirmed the Nakatsu teaching of a tingling substance of spiranthol** (*See*, the July 2, 2008 Amendment, page 4, lines 1-3). However, spiranthol is distinct from the claimed invention (*See*, the July 2, 2008 Amendment, page 4, lines 5-17).

- Applicants' disclosure does not indicate extracting the claimed alkadienamides from all Piper species

Thirdly, Examiner asserts Applicants argued that black pepper extract from *Piper nigrum* does not contain the claimed alkadienamides (*See*, Office Action, page 3, lines 22-23). Examiner further states that "**the Specification on page 3, last paragraph indicated that the alkadienamides can be extracted from Piper species,**" and concludes that "[b]lack pepper or *Piper nigrum* is a species of *Piper*; thus, black pepper would inherently contain a mixture of the claimed alkadienamides" (*See*, Office Action, page 3, line 23 to page 4, line 3).

In contrast to Examiner's quotation and interpretation, the specification on page 3, last paragraph reads the following:

The . . . alkadienamide mixtures of the invention may be obtained by means of (a) extraction of **one of the *Piper* species, *Piper longum* Linn or *Piper peepuloides* . . .**

Thus, the claimed invention clearly and specifically states *Piper longum* Linn and *Piper peepuloides* as the *Piper* species for extracting and obtaining the claimed alkadienamides. In addition, such disclosure has been recited consistently through the specification as filed (*See*, for example, Specification, page 1, 1<sup>st</sup> paragraph; page 5, line 19 to page 6, line 30). Accordingly, Applicants' disclosure does not indicate extracting the claimed alkadienamides from all *Piper* species, and therefore affords no basis for the conclusion of "black pepper inherently contain a mixture of the claimed alkadienamides" (*See*, Office Action, page 3, line 23 to page 4, line 3).

For at least the above reasons, it is respectfully submitted that Examiner's opinion under this 35 U.S.C. § 102 rejection is considered to be moot.

**Claim Rejection Under 35 U.S.C. § 103**

Claims 3, 4, 40, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakatsu *et al.* (US 6780443) for the reasons set forth in the previous Office Action (*See*, Office Action, page 4, lines 13-15).

Examiner sets forth the same argument as those of the above 35 U.S.C. § 102 rejection, which include (i) black pepper extract inherently contains the claimed alkadienamides (*See*, Office Action, page 4, lines 19-23); (ii) Applicants argued that tingling sensate of spilanthol is not taught (*See*, Office Action, page 4, line 13); and (iii) Applicants' disclosure indicates that the alkadienamides can be extracted from *Piper* species, and therefore black pepper would inherently contain a mixture of the claimed alkadienamides (*See*, Office Action, page 5, lines 19-22).

In response, Applicants submit the same arguments as above that (i) there is no rationale or evidence tending to show inherency; (ii) spilanthol is distinct from the claimed invention; and (iii) there is no indication in Applicants' disclosure that the claimed alkadienamides can be extracted from any *Piper* species.

Further, the distinctiveness of black pepper was demonstrated in the Declaration Traversing Rejections under 37 CFR § 1.132 ("Declaration") filed on July 2, 2008. Applicants conducted a study to compare the flavor of black pepper and *Piper longum* Linn. In particular, the tingling effect disclosed in the claimed invention was evaluated and compared (*See*, for example, Specification, page 25, Example IIC; and page 27, Example IIIC). As clearly shown in the Declaration, black pepper and *Piper longum* Linn had distinctive flavor profiles. Particularly, the tingling effect differed significantly. On a scale of 0-5, with 0 being no effect, 1 being minimal intensity, and 5 being great intensity, black pepper scored 1, while *Piper longum* Linn scored 5.

Furthermore, it is known in the art that the *Piper* family contains thousands of species, different in distribution as well as chemical compositions (*See*, Specification, page 1, line 21 to page 2, line 22). This comparison study consistently demonstrated that black pepper and *Piper longum* Linn belong to the same genus of *Piper* family, but nevertheless they are distinct plants

having distinctive attributes. These data support the argument that black pepper and *Piper longum* Linn are different in chemical compositions.

Accordingly, Applicants respectfully submit that the claimed invention is patentable over Nakatsu *et al.* For at least these reasons, Applicants respectfully request that the 35 U.S.C. § 103 rejection be withdrawn.

## **CONCLUSION**

In view of the foregoing, Applicants respectfully request reconsideration, withdrawal of rejections, and allowance of all claims now present in the application.

The Commissioner is authorized to charge any required fees, including any extension and/or excess claim fees, any additional fees, or credit any overpayment to International Flavors & Fragrances Inc. Deposit Account No. 12-1295.

Respectfully submitted,



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XuFan Tseng (Reg. No. 55,688)  
International Flavors & Fragrances Inc.  
521 West 57th Street  
Law Department – 10th Floor  
New York, NY 10019  
Telephone: 212.708.7163 / 732.335.2066